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EXAMINER

THOMAS, COURTNEY D

ART UNIT PAPER NUMBER

2882

DATE MAILED: 08/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/515,266

Applicant(s)

RILEY, CARL WILLIAM

Examiner

Courtney Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 61-69 and 71, 73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 61-69 and 73 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 4/15/03, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Election/Restrictions

2. During a personal interview with Robert Null on Wednesday, June 12, 2002, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-19, 60-69 and 71-73. The terms of the restriction/election discussed and agreed to during the interview were not reduced to writing and are presented here as a matter of record:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-19, 60-69 and 71-73, drawn to an optical isolation device, classified in class 250, subclass 551 (Signal Isolation).
- II. Claims 20-59 and 70 drawn to an opto-electric device, classified in class 398, subclass 67 (Multiplexing/ Bi-directional Optical Communication).

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group I has separate utility such as the generation of electrical power based on the receipt of optical signals useful in powering a signal generator; the signal generator in turn provides optical signals to a remote location; Group II relates to an apparatus configured for optical communication between two circuits via an optical channel; the communication is defined by the transmission of light from a first circuit (comprising a light source), and a receipt of light by the first circuit from the second circuit (also comprising a light source) when the first circuit light source is in an "off" state. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Affirmation of this election was made by applicant's representative in replying to this Restriction requirement as noted in Amendment A (Paper No. 8 - received June 13, 2002). Claims 20-59 and 70 were withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant's election without traverse of claims 1-19, 60-69 and 71-73 in Paper No. 8 (June 13, 2002) is acknowledged.

Drawings

3. This application has been filed with informal drawings that are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 11, 12, 13, 16, 18, 19 and 71 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuji et al. (U.S. Patent 5,664,035).

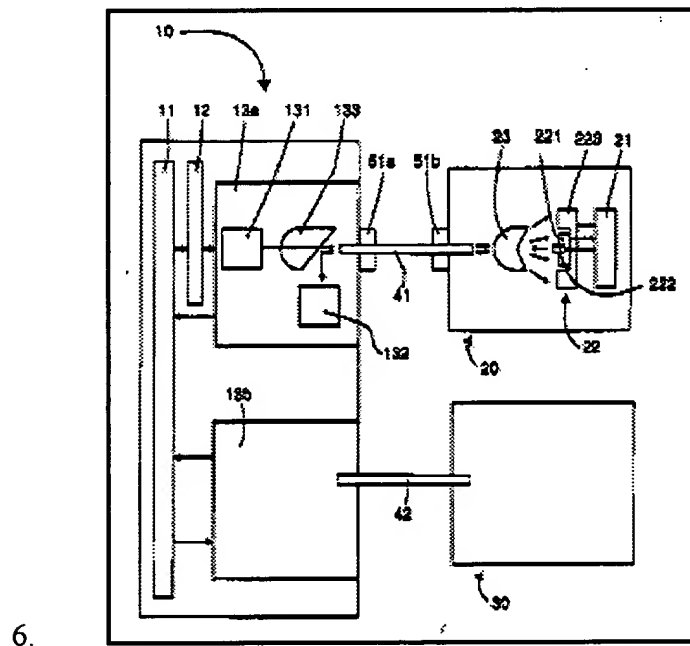


Figure 1 – Bi-directional Optically Powered Signal Transmission Apparatus –

U.S. Patent 5,664,035 to Tsuji et al.

7. **As per claims 1 and 71**, Tsuji et al. disclose an apparatus (and method) comprising: an optical channel (41) having a first end (i.e. Fig. 1, near connector 51a) and a second end (i.e. Fig.

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1, near connector **51b**) a light source (**131**) adjacent the first end for transmitting light through the optical channel; a detector (**223**) adjacent the second end producing electrical power when impinged upon by the light; a signal generator (**222**; column 4, lines 41-43) adjacent the second end powered by the electrical power generated by the electrical power from the detector (column 4, lines 55-58), the signal generator transmitting optical signals in response to input from a remote isolated circuit (see Fig. 1, **10**), the input being generated by a user of the remote isolated circuit; a sensor (**132**) adjacent the first end (i.e. Fig. 1, near connector **51a**) for producing electrical signals in response to the optical signals(column 5, lines 35-36).

8. **As per claim 2**, Tsuji et al. disclose an apparatus comprising a fiber optic filament (**41**, **42**).

9. **As per claim 4**, Tsuji et al. disclose an apparatus comprising lenses (**133**, **23**).

10. **As per claim 11**, Tsuji et al. disclose an apparatus wherein the intensity of the light source and the sensitivity of the detector are sufficient to satisfy the power needs of the remote isolated circuit and the signal generator (see abstract).

11. **As per claims 12, 13, 16, 18 and 19**, Tsuji et al. disclose an apparatus wherein a) the light source generates light in a bandwidth centered about a first frequency, the detector is sensitive in a bandwidth including the first frequency, the signal generator generating optical signals in a bandwidth centered about a second frequency and the sensor being sensitive in a bandwidth including the second frequency; b) the light source generates monochromatic light; c) the source is a laser; d) the signal generator includes a light emitting diode and e) the light source has a narrow bandwidth (see abstract; column 4, lines 59-62).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 5-8 and 14, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. (U.S. Patent 5,664,035).

14. **As per claims 5-8**, Tsuji et al. disclose not explicitly disclose an apparatus wherein the detector (223) comprises photonic devices.

15. It would have been obvious to modify the apparatus of Tsuji et al. such that the detector comprises photonic devices. One would have been motivated to make such a modification so that the detector could receive incident photons and convert them to electrical signals, thereby allowing the detector to indicate the intensity of the received energy.

16. **As per claims 14, 15 and 17**, Tsuji et al. do not explicitly disclose an apparatus wherein a) the sensor is not sensitive to monochromatic light, b) the sensor is not sensitive to light in the bandwidth centered about the first frequency and c) wherein the light source is a semiconductor laser.

17. Tsuji et al. teach the use of light emitting structures for generating light at particular wavelengths (i.e. coherent radiation) that are sensed by corresponding receiving sensors. Tsuji et al. teach that such configuration enables bi-directional communication among device elements without the problem of cross talk and/ or interference of generated signals. Additionally, Tsuji et

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al. anticipate the use equivalent forms light emitting sources such as LEDs and semiconductor lasers (see column 7, lines 12-18).

18. It would have been obvious to modify the apparatus of Tsuji et al. such that it incorporated the aforementioned features. One would have been motivated to make such modifications for the purpose of ensuring signal isolation from the communicating elements as suggested by Tsuji et al. Additionally, it would have been obvious to incorporate a semiconductor laser as a light source since it is commonly accepted by practitioners in the radiation art that semiconductor lasers are capable of generating the monochromatic radiation required for use within the system of Tsuji et al.

Allowable Subject Matter

19. Claims 3, 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. **As per claim 3 and dependent claims 9 and 10**, the examiner found no reference in the prior art that disclosed or made obvious a system comprising a controller coupled to a light source and sensor, the controller causing a task to be performed in response to receipt of optical signals.

21. Claims 61, 62-69 and 73 are allowed.

22. The following is a statement of reasons for the indication of allowable subject matter:

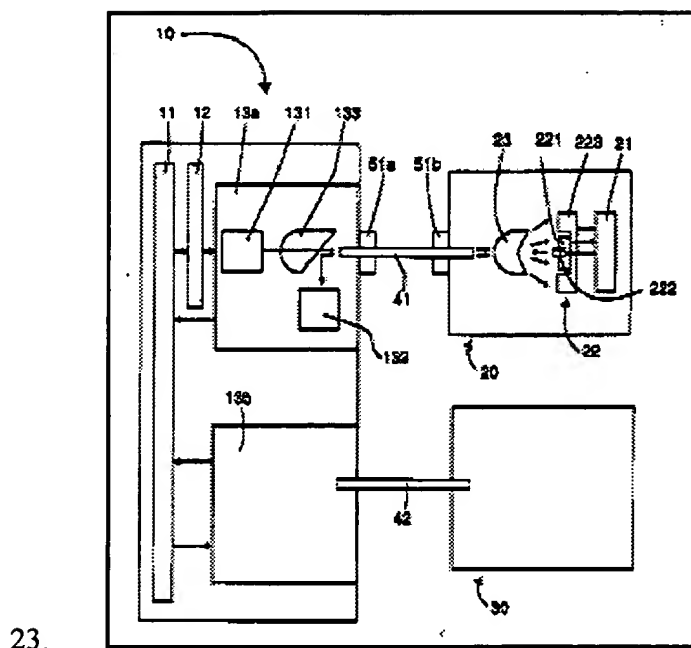


Figure 2 – Bi-directional Optically Powered Signal Transmission Apparatus –

U.S. Patent 5,664,035 to Tsuji et al.

24. As per independent claims 62 and 73 and dependent claims 61 and 63-69, the prior art teaches a system (and method of operation) comprising. an optical channel (41), a light source (131) for transmitting light in a first direction through the channel (41), a detector (223) for producing power in response to the transmitted light, an optical signal generator (222) for converting the input signal from a remote circuit (10) to an optical signal, the signal generator (222) transmitting the optical signal through the channel (41).

25. The examiner however, found no reference in the prior art that disclosed or made obvious a system comprising an actuator controlled by a controller and wherein a source circuit controller responds to an electrical signal by causing the actuator to perform a task corresponding to the input signal from the remote circuit as recited in independent claim 73.

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26. The Examiner found no reference in the prior art that disclosed or made obvious a method comprising the step of: converting a transmitted second light signal to an electrical input signal for a controller to cause the controller to perform a task corresponding to the remote circuit electrical output signal as recited in independent claim 62.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

28. U.S. Patent 5,796,890 to Tsuji et al. is a patent based on a continuation in part of Patent Application 419,141 now U.S. Patent 5,664,035, cited as the art of record above.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (703) 306-0473. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (703) 308 4858. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Courtney Thomas

August 6, 2003


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